

AMENDMENTAmendment to Claims

Please add the following claims as shown below.

SUB 4

23. (Newly added) An apparatus adapted to process an image, comprising: an amplifier adapted to apply more than one gain level to the image; and a processor coupled to the amplifier, wherein the processor is capable of adjusting the more than one gain level applied by the amplifier.

24. (Newly added) The apparatus of claim 23, further comprising a sensor coupled to the amplifier provide the amplifier with the image.

25. (Newly added) The apparatus of claim 23, wherein the processor is further capable of providing a control signal to the amplifier to adjust the more than one gain level applied by the amplifier.

26. (Newly added) The apparatus of claim 23, wherein the amplifier is capable of applying different gain levels to different regions of the image.

27. (Newly added) The apparatus of claim 23, wherein the processor is capable of updating a gain map comprising settings applied by the amplifier.

28. (Newly added) The apparatus of claim 27, wherein the gain map is a two dimensional array of gain levels, each gain level indicating a particular gain applied by the amplifier to a corresponding region of the image.

29. (Newly added) The apparatus of claim 27, further comprising a register coupled to the processor and the amplifier.

30. (Newly added) The apparatus of claim 29, wherein the register is capable of storing the gain map and the amplifier is adapted to read the gain levels from the register.

31. (Newly added) The apparatus of claim 25, wherein the processor is further adapted to provide the control signal to the amplifier in real-time.

32. (Newly added) The apparatus of claim 24, wherein the processor is further adapted to analyze the image to determine if the sensor is providing a sufficient level of detail.

33. (Newly added) The apparatus of claim 32, wherein the processor is further adapted to increase the gain level in dark portions of the image and decrease the gain level in bright portions of the image.

34. (Newly added) An apparatus capable of processing an image, comprising: an image capture device coupled to the apparatus and capable of providing the image; an amplifier coupled to the camera, wherein the amplifier is adapted to apply at least two gain levels, each to a different region of the image; and a processor coupled to the amplifier, wherein the processor is adapted to provide a signal to the amplifier to adjust the at least two gain levels.

35. (Newly added) The apparatus of claim 34, wherein the image capture device is a camera.

36. (Newly added) The apparatus of claim 34, wherein the processor is capable of generating a gain map containing gain levels applied by the amplifier.

37. (Newly added) The apparatus of claim 36, wherein the gain map is a two dimensional array of gain levels, each gain level indicating a particular gain applied by the amplifier to a region of the image.

38. (Newly added) The apparatus of claim 37, wherein the processor is capable of dividing the image into a two dimensional array of image regions, each image region being associated with a corresponding level in the gain map.

39. (Newly added) The apparatus of claim 34, further comprising a register coupled to the processor.

40. (Newly added) The apparatus of claim 39, wherein the register is capable of storing a gain map and the amplifier is capable of reading the gain levels from the register.

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CONT

41. (Newly added) A method of processing an image, comprising:  
amplifying a first portion of the image to a first gain level;  
amplifying a second portion of the image to a second gain level; and  
updating the first gain level and the second gain level in a gain map.

42. (Newly added) The method of claim 41, wherein updating the first gain level and the second gain level is performed in response to clipping of a portion of the image.

43. (Newly added) The method of claim 41, wherein updating the first gain level and second gain level includes increasing the gain level in dark portions of the image and reducing the gain level in bright portions of the image.

44. (Newly added) The method of claim 41, wherein updating the first gain level and the second gain level includes dividing the image into a plurality of image regions, wherein each of the plurality of image regions is associated with a gain level in the gain map.

45. (Newly added) The method of claim 41, further comprising analyzing each image region and updating the associated gain level in response to clipping of the image.